

The call heard in captivity was a rapid "ho ho ho ho" ("o" as in cot), high pitched and like the noise made by a child's squeeze toy.

*Notaden nichollsi* Parker. Of this species 5 specimens were collected in March. Two were forwarded to A. R. Main.

One specimen was dug by native children from a burrow in the creek bed and another from about 200 yards from the creek. The other specimens were brought by children but they could give no information regarding their collection.

The gut contents of the specimen preserved soon after capture were predominantly termites. These have been identified by J. H. Calaby as *Drepanotermes rubriceps* (Froggatt).

Both *Notaden nichollsi* and *Limnodynastes spenceri* are known to the local natives as "Nan-kra"; "-kra" shows ownership in the local languages—*Mantjiltjara* and *Katatjara*—thus these are two frogs which own (= speak) "Nan."

The specimens of all species have been identified by Dr. A. R. Main of the Zoology Department, University of Western Australia.

—ERIC LINDGREN, Jigalong.

**A Note on the Food of Australian Desert Frogs.**—Main and Calaby (*W.A. Nat.*, 5, 1957: 216) have given some observations on the food of Australian desert frogs. The stomach contents of 9 specimens of *Limnodynastes spenceri* Parker and 12 specimens of *Cyclorana cultripes* Parker were examined, among other species. The prey consisted of a wide variety of arthropods, but was predominantly termites and ants. These authors concluded that the several species of frogs examined were unspecialized predators, and pointed out that the large number of termites and ants eaten was no doubt due to the fact that the weather conditions, which bring desert frogs to the surface for feeding and breeding, are the same as those which precipitate colonizing flights of termites and ants. Also, ants and surface-foraging termites, which appear above ground after rain or during humid weather, are dominant faunal elements in inland Australia. In this group of termites the most abundant and widespread is *Drepanotermes rubriceps* (Froggatt).

By courtesy of Dr. A. R. Main, the writer has been able to examine the stomach contents of a further 3 specimens of *C. cultripes* and 6 specimens of *L. spenceri*. The *C. cultripes* were collected 12 miles from Port Hedland on the Marble Bar road (E. H. M. Ealey, Jan. 20, 1958). One stomach contained a large number of alates of an *Amitermes* species and some sand grains. Another contained a large number of alates of the same *Amitermes* species and, in addition, a few alates of *D. rubriceps*, one small worker ant (*Iridomyrmex* sp.), a small centipede, and a mass of unidentified silky material which somewhat resembled spider egg-cases. The third specimen contained only a mass of the silky material and some sand grains. The only abundant food item in the 6 specimens of *L. spenceri* (Jigalong, E. Lindgren, April and May, 1959) was *D. rubriceps*. One stomach contained an alate and a few workers and soldiers, and the others contained soldiers and workers only, varying in numbers from 25 to about 150. Other food items were

small numbers of ant workers in several genera (*Iridomyrmex*, *Meranoplus*, *Pheidole*, *Camponotus*, *Polyrhachis*), a small cockroach, a weevil, and 2 Pentatomid bugs. Some stomachs contained plant fragments and sand grains. Two specimens of an unidentified species of *Neobatrachus* (12 miles from Port Hedland, E. H. M. Ealey, Jan. 20, 1958) gave little information on food. One stomach was empty and the other contained fragmentary remains of one termite alate and an ant worker, and some plant fragments and sand grains.

Three specimens of the rarely-collected *Notaden nicholli* Parker were also examined, two from the Port Hedland area (Ealey) and one from Jigalong (Lindgren), March 1959. The Jigalong specimen contained approximately 300 soldiers and workers of *D. rubriceps*, a fair number of worker ants in the following genera (*Rhytidoponera*, *Iridomyrmex* (*detectus* group), small *Iridomyrmex*, *Pheidole*, *Camponotus*, and unidentified), some plant fragments and sand grains. The Port Hedland specimens also contained termites (all castes of *D. rubriceps*, alates of *Amitermes* sp., and soldiers of *Tumulitermes recalvus* (Hill)) and worker ants (a small *Iridomyrmex*, *Xiphomyrmex*, a medium to large *Camponotus*, and unidentified). One contained in addition plant stalks and a seed, and a large sand grain.

For comparison, three available specimens of *Notaden bennetti* Gunther, from central inland Queensland, were examined. The stomach contents consisted largely of worker ants (species of *Rhytidoponera* (*metalliea* group), small *Iridomyrmex*, *Monomorium*, *Camponotus*) ranging from about 60 in one specimen to approximately 90 in each of the other two. Other food items were 6 lepidopterous larvae about 20 mm. long, 6 small beetles, and a wasp 10 mm. long in one stomach, and a Carabid beetle in another. Two stomachs contained a few plant seeds.

Parker (*Nov. Zool.*, 42, 1940: 1) states of *Myobatrachus* and *Notaden* that "both are essentially myrmecophagous and specially adapted for life in termitaria." *Myobatrachus* is a specialized termite predator which feeds underground and is always found in association with termite galleries (Calaby, *W.A. Nat.*, 5, 1956: 93; Philipp, *W.A. Nat.*, 6, 1958: 131). *Notaden* on the other hand resembles other desert leptodactylid frogs in that it comes to the surface to feed during and after rain. Although the main food items found in *Notaden* stomachs were termites and ants it seems probable that the two species are similar to *C. cultripes* and *L. spenceri* in that they are not specialized feeders and the predominance of social insects in their diet is due to the fact that these are the most abundant available prey.

The foregoing observations favour the previous conclusions of Main and Calaby and give further support to the contention of Main, Littlejohn, and Lee (p. 409 in *Ecological Research in Australia*, ed. F. S. Bodenheimer (W. Junk: The Hague; 1959) that specialized feeding in frogs "is associated only with reliable climatic conditions and is unlikely to be found in desert frogs."

—J. H. CALABY, Canberra.